This document provides pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a minor, municipal permit. The discharge results from the operation of a 0.015 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia Water Quality Standards, effective 6 January 2011, and updating permit language as appropriate. The effluent limitations and special conditions contained within this permit will maintain the Water Quality Standards of 9VAC25-260 et seq.

1.	Facility Name and Mailing Address:	Middleburg Academy 35321 Notre Dame Lane Middleburg, VA 20117	SIC Code:	4952 WWTP
	Facility Location:	35321 Notre Dame Lane Middleburg, VA 20117	County:	Loudoun
	Facility Contact Name:	Colley W. Bell, III	Telephone Number:	540-687-5581
	Facility Email Address:	cbell@middleburgacademy.org		
2.	Permit No.:	VA0027197	Expiration Date:	22 April 2014
	Other VPDES Permits:	Not Applicable		
	Other Permits:	Registration 3012638 – aboveground storage petroleum tank PWSID 6107100 – public water system		
	E2/E3/E4 Status:	Not Applicable		
3.	Owner Name:	Middleburg Academy, Incorporated		
	Owner Contact / Title:	Colley W. Bell, III / Head of School	Telephone Number:	540-687-5581
	Owner Email Address:	cbell@middleburgacademy.org		
4.	Application Complete Date:	3 October 2013		
	Permit Drafted By:	Douglas Frasier	Date Drafted:	21 October 2013
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	25 October 2013
	Public Comment Period:	Start Date: 9 January 2014	End Date:	7 February 2014
5.	Receiving Waters Information:	See **Attachment 1** for the Flow Frequency Determination.		
	Receiving Stream Name:	Goose Creek, UT	Stream Code:	1aXDV
	Drainage Area at Outfall:	0.3 square miles	River Mile:	0.32
	Stream Basin:	Potomac River	Subbasin:	Lower Potomac River
	Section:	9	Stream Class:	III
	Special Standards:	None	Waterbody ID:	VAN-A05R
	7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.0 MGD
	1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.0 MGD
	30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.0 MGD
	Harmonic Mean Flow:	0.0 MGD	30Q5 Flow:	0.0 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

- ✓ State Water Control Law
- ✓ Clean Water Act
- ✓ VPDES Permit Regulation
- ✓ EPA NPDES Regulation
- ___ EPA Guidelines
- ✓ Water Quality Standards
- ___ Other

7. **Licensed Operator Requirements:** Class IV

8. **Reliability Class:** Class II

9. **Facility/Permit Characterization:**

✓ Private	✓ Effluent Limited	Possible Interstate Effect
Federal	✓ Water Quality Limited	Compliance Schedule Required
State	Whole Effluent Toxicity Program	Interim Limits in Permit
POTW	Pretreatment Program	Interim Limits in Other Document
✓ TMDL	eDMR Participant	

10. **Wastewater Sources and Treatment Description:**

The Middleburg Academy is a small private school with approximately 150 day students and seasonal school year residents; therefore, the flow from this facility is considered continuous.

Sewage flows to the treatment plant via gravity through an 8-inch collection system that serves the school and its support facilities. Preliminary treatment consists of a comminutor and a bar screen; secondary treatment consists of an extended aeration unit with two blowers, air lift return sludge pumps, diffusers and a clarifier. Disinfection is accomplished through use of a tablet chlorinator and a baffled chlorine contact tank. Dechlorination is accomplished via tablet feeder.

Hydrated lime is manually added to the aeration basin for alkalinity adjustment. Effluent from the aeration basin flows to a clarifier equipped with an automatic skimmer. Manual skimming of the clarifier is also conducted routinely. After clarification, the effluent is chlorinated and dechlorinated prior to discharge. Accumulation of solids can occur in the chlorine contact tank. A pump has been installed to transfer these solids from the chlorine contact tank to the clarifier. Excess sludge is wasted to an aerobic/anaerobic digester. The supernatant from the digester is sent to the aeration basin.

After treatment, the effluent flows via gravity approximately 300 feet to Outfall 001. Discharge from Outfall 001 cascades down a rip-rap lined channel into an unnamed tributary of Goose Creek. This process allows for some post-aeration. All sampling, except that needed to monitor the chlorine contact tank, is conducted at the outfall.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1
OUTFALL DESCRIPTION

Number	Discharge Sources	Treatment	Design Flow	Latitude / Longitude
001	Domestic Wastewater	See Section 10	0.015 MGD	38° 59′ 27.1″ / 77° 47′ 21.1″

See **Attachment 3** for the Rectortown topographic map.

11. **Sludge Treatment and Disposal Methods:**

Excess sludge is wasted to an aerobic/anaerobic digester. The digester is pumped out approximately two to four times per year and the contents are transported to the Blue Plains Interceptor near Leesburg through an agreement with Loudoun County Sanitation Authority.

12. Discharges Located Within Waterbody VAN-A05R:

TABLE 2
DISCHARGES LOCATED WITHIN VAN-A05R

Permit Number	Facility Name	Type	Receiving Stream
VA0091464	Mount Weather Emergency Operations Center	Industrial Discharge Individual Permit	Jeffries Branch, UT
VA0024112	Foxcroft School	Municipal Discharge Individual Permits	Goose Creek
VA0024775	Middleburg Wastewater Treatment Plant		Wancopin Creek
VA0024759	Mount Weather Emergency Operations Center		Jeffries Branch, UT
VAG830431	Foxcroft School	Petroleum Contamination General Permit	Goose Creek, UT
VAG406470	Allen Residence	Small Municipal ≤ 1,000 gpd General Permits	Goose Creek, UT
VAG406193	Latimer Residence		Woolf's Mill Run

13. Material Storage:

TABLE 3
MATERIAL STORAGE

Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Hydrated lime	One (1) 50 lb. bag	Inside building, under roof
Calcium hypochlorite	One (1) 45 lb. container	
Sodium sulfite	Three (3) 45 lb. containers	Stored in buckets with lids adjacent to tablet feeder

14. Site Inspection:

Performed by NRO Compliance Staff on 22 August 2008 (see **Attachment 4**).

15. Receiving Stream Water Quality and Water Quality Standards:

a) Ambient Water Quality Data

This facility discharges into an unnamed tributary to Goose Creek. This unnamed tributary flows into Goose Creek, approximately 0.3 miles downstream of Outfall 001. There is a DEQ water quality monitoring station on Goose Creek located approximately 0.2 miles upstream of this confluence. Station 1aGOO030.75 is located at the Route 611 bridge crossing. The following is the water quality summary for this segment of Goose Creek, as taken from the 2012 Integrated Report:

- Class III, Section 9;
- The DEQ ambient monitoring station located on this segment of Goose Creek: 1aGOO030.75, at Route 611;
- *E. coli* monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for Goose Creek;
- The aquatic life use is considered fully supporting. The data collected by the citizen monitoring group indicate that a water quality issue may exist; however, the methodology and/or data quality has not been approved for such a determination. Citizen monitoring finds a medium probability of adverse conditions for biota and is noted by an observed effect for the aquatic life use;

- The wildlife use is considered fully supporting; and
- The fish consumption use was not assessed.

A second downstream monitoring station is 1aGOO022.44, located approximately 8.1 miles downstream of Outfall 001 on Goose Creek at the Route 734 bridge crossing. The following is the water quality summary for this segment of Goose Creek, as taken from the 2012 Integrated Report:

- Class III, Section 9;
- The following are the DEQ monitoring stations located on this segment of Goose Creek: 1 aGOO022.44, at Route 734 and 1aGOO021.28, downstream of Route 734 (freshwater probabilistic); and
- Biological and associated chemical monitoring indicates that the aquatic life, recreation, fish consumption and wildlife uses are fully supporting. Citizen monitoring finds a medium probability of adverse conditions for biota, however subsequent DEQ biological monitoring has found this segment to be fully supporting for the benthics.

b) 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

TABLE 4
INFORMATION ON DOWNSTREAM 303(d) IMPAIRMENTS AND TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA
Impairment Information in the 2012 Integrated Report						
Goose Creek	Recreation	*E. coli*	0.3 miles	Goose Creek Watershed Bacteria 05/01/2003 modified 10/27/2003	4.16E+10 cfu/year fecal coliform	200 cfu/100mL FC --- 0.015 MGD
	Aquatic Life	Benthic Macroinvertebrates	25.2 miles	Goose Creek Watershed Benthic 04/26/2004	0.7 tons/yr TSS	30 mg/L TSS --- 0.015 MGD
	Fish Consumption	Polychlorinated biphenyls (PCBs)	24.1 miles	No – 2018	No WLA for this facility is anticipated	Pollutant of concern is not expected to be present in this discharge

The full planning statement is found in **Attachment 5.**

c) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Goose Creek, UT, is located within Section 9 of the Potomac River Basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32° C and maintain a pH of 6.0 – 9.0 standard units (S.U.).

Attachment 6 details other water quality criteria applicable to the receiving stream.

Ammonia:

The fresh water, aquatic life Water Quality Criteria for ammonia is dependent on the instream pH and temperature. The 90th percentile pH and temperature values are utilized since they best represent the critical conditions of the receiving stream. The critical 30Q10 flow, utilized to ascertain ammonia criteria, for this receiving stream has been determined to be 0.0 MGD. In cases such as this, effluent pH and temperature data may be employed to establish the ammonia criterion. See **Attachment 7** for the derivation of the 90th percentile pH values obtained from the June 2009 to September 2013 reported effluent data. Since effluent temperature data was not readily available, a default value of 25° C for summer and an assumed value of 15° C for winter was utilized.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream and/or effluent hardness values (expressed as mg/L calcium carbonate). The critical 7Q10 flow of the receiving stream is zero; thus, ambient data is not available. Effluent data may be used to determine the metals criteria; however, effluent hardness data is not available for this facility. Staff guidance suggests utilizing a default hardness value of 50 mg/L $CaCO_3$ for streams east of the Blue Ridge.

The hardness-dependent metals criteria shown in **Attachment 6** are based on this default value.

Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170.A state that the following criteria shall apply to protect primary recreational uses in surface waters:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Geometric Mean[1]
Freshwater *E. coli*	126 n/100 mL

[1]For a minimum of four weekly samples taken during any calendar month

d) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Goose Creek, UT, is located within Section 9 of the Potomac River Basin. This section has not been designated with a special standard.

e) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on 2 October 2013 for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 3 mile radius of the discharge: dwarf Wedgemussel (*Alasmidonta heterodon*); wood turtle (*Glyptemys insculpta*); upland sandpiper (*Bartramia longicauda*); loggerhead shrike (*Lanius ludovicianus*); Henslow's sparrow (*Ammodramus henslowii*); green floater (*Lasmigona subviridis*); and migrant loggerhead shrike (*Lanius ludovicianus migrans*). The proposed limits within this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge.

In addition, the Virginia Department of Game and Inland Fisheries and the United States Fish and Wildlife Service were coordinated during this reissuance per the procedures as set forth in the 2007 Memorandum of Understanding (MOU) concerning Threatened and Endangered Species Screening for VPDES Permits. The purpose of this coordination is to obtain input from other agencies during the permitting process to ascertain potential adverse impacts to threatened and endangered species and/or their habitats.

Any comments from these agencies are located in Section 26 of this Fact Sheet.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

It is staff's best professional judgement that the receiving stream be classified as Tier 1 based on the following: (1) the stream critical flows have been determined to be zero; (2) at times the stream flow may be comprised of only effluent; (3) the noted downstream impairments; and (4) the Total Maximum Daily Loads (TMDLs) associated with the receiving stream.

The proposed permit limits have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case, since the critical flows 7Q10, 1Q10 and 30Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a) Effluent Screening

Effluent data obtained from the permit application and the June 2009 – September 2013 Discharge Monitoring Reports (DMRs) have been reviewed and determined to be suitable for evaluation.

Please refer to **Attachment 7** for a summary of effluent data.

b) Mixing Zones and Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o[Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:
- WLA = Wasteload allocation
- C_o = In-stream water quality criteria
- Q_e = Design flow
- Q_s = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
- f = Decimal fraction of critical flow
- C_s = Mean background concentration of parameter in the receiving stream.

It has been ascertained that the water segment receiving the discharge via Outfall 001 has critical 7Q10, 1Q10 and 30Q10 flows of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c) Effluent Limitations and Monitoring, Outfall 001 – Toxic Pollutants

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N / TKN:

Staff reevaluated pH and temperature data and concluded it is not significantly different than what was utilized previously to derive the ammonia criteria. Nonetheless, staff utilized the current data to calculate the water quality criteria, wasteload allocations (WLAs) and subsequent ammonia limits. See **Attachment 6** for the criteria and WLAs and **Attachment 8** for the limitation derivation. DEQ guidance suggests utilizing a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential presence of ammonia.

The resultant limitations during this analysis revealed monthly and weekly average limits of 4.5 mg/L compared to the current limit of 2.2 mg/L for both averaging periods. Staff review of effluent data indicates that this facility consistently achieves the current ammonia limitation with the majority of reported data found below the laboratory quantification level. Furthermore, antibacksliding provisions do not allow for the relaxation of limits based on changes in the criterion.

It is staff's best professional judgement that the current limitation of 2.2 mg/L for both monthly and weekly averages be carried forward with this reissuance.

See **Attachment 9** for the 2004 ammonia limit derivations.

2) Total Residual Chlorine (TRC):

Chlorine is utilized for disinfection and is potentially in the discharge. Staff calculated wasteload allocations for TRC utilizing critical stream flows. In accordance with current DEQ guidance, staff applied a default data point of 0.2 mg/L and the calculated WLAs to derive the limits. Subsequent chlorine limitations of 0.008 mg/L and 0.010 mg/L for monthly and weekly averages, respectively, were derived. This results in no changes to the current limitations.

See **Attachment 10** for chlorine limitation calculations.

3) Metals/Organics:

Based on the sources of wastewater, it is staff's best professional judgement that limits would not be warranted since metals would not be expected present in appreciable amounts.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), ammonia, total residual chlorine (TRC) and pH limitations are proposed.

Dissolved oxygen, BOD_5 and total suspended solids limitations are based on the stream modeling conducted in June 1978 (**Attachment 11**) and are set to meet the water quality criteria for dissolved oxygen in the receiving stream.

It is staff's practice to equate the total suspended solids limits with the BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9VAC25-260-170, effective 6 January 2011.

e) Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following table. Limits were established for pH, BOD_5, total suspended solids, ammonia as N, dissolved oxygen, total residual chlorine and *E. coli*.

The limit for total suspended solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and then a conversion factor of 3.785.

Sample types are in accordance with the recommendations in the VPDES Permit Manual.

The proposed sample frequency for bacteria is modified from once per week every month, per the current VPDES Permit Manual, to once per week during one month within each calendar quarter. The facility was monitoring for bacteria on a monthly basis, reporting a single sample maximum during the last permit term. The proposed sampling regiment represents the required geometric mean while recognizing the facility's past performance record. This proposed frequency ensures that the facility adequately disinfects on a consistent basis and is in compliance with assigned wasteload allocation found within the Goose Creek Watershed Bacteria TMDL.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD and TSS (or 65% for equivalent to secondary). Review of the June 2009 – September 2013 effluent data suggests that this facility is achieving the required removal rates when compared to expected influent BOD and TSS concentrations for a school (Sewage Collection and Treatment Regulations at 9VAC25-790-460.F). The average reported effluent value for total suspended solids was 12 mg/L while BOD data was generally less than the laboratory quantification level.

It is staff's best professional judgement that the aforementioned removal rate is being achieved; therefore, influent BOD and TSS monitoring is not warranted during this permit term.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.015 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/D	Estimate
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	1,3,5	30 mg/L 1.7 kg/day	45 mg/L 2.6 kg/day	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2,4,5	30 mg/L 1.7 kg/day	45 mg/L 2.6 kg/day	NA	NA	1/M	Grab
Dissolved Oxygen (DO)	3,5	NA	NA	5.0 mg/L	NA	1/D	Grab
Ammonia, as N	3	2.2 mg/L	2.2 mg/L	NA	NA	1/M	Grab
E. coli (Geometric Mean) [a] [b]	3,6	126 n/100mL	NA	NA	NA	1/Q	Grab
Total Residual Chlorine (after contact tank)	2,7	NA	NA	1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. Goose Creek Watershed Benthic TMDL
5. Stream Model – **Attachment 11**
6. Goose Creek Watershed Bacteria TMDL
7. DEQ Disinfection Guidance

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.

1/D = Once every day.
1/M = Once every month.
1/Q = Once every calendar quarter.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.
Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Samples shall be collected between 10:00 a.m. and 4:00 p.m.

b. The permittee shall collect four (4) samples during one month within each quarterly monitoring period as defined below. The results shall be reported as the geometric mean.

The quarterly monitoring periods shall be January through March, April through June, July through September and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-790 and by the Water Quality Standards at 9VAC25-260-170. Minimum chlorine residual must be maintained at the exit of the chlorine contact tank to ensure adequate disinfection. No more that 10% of the monthly test results for total residual chlorine (TRC) at the exit of the chlorine contact tank shall be < 1.0 mg/L with any TRC < 0.6 mg/L considered a system failure. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions:

a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a PVOTW.

b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class IV operator.

f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet reliability Class of II.

g) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

h) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2., and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

i) Bacteria Monitoring Frequency. If the facility exceeds the geometric mean for *E. coli* during a sampling period, then the monitoring frequency of once per week shall become effective upon written notification from DEQ for a period of no less than 30 days. The permittee may request the reduced monitoring frequency be reinstated upon demonstration of compliance for a given month.

j) TMDL Reopener. This special condition is to allow the permit to be reopened, if necessary, to bring the facility into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. **Changes to the Permit from the Previously Issued Permit:**

a) Special Conditions:

- The Bacteria Monitoring Frequency special condition was included with this reissuance.

b) Monitoring and Effluent Limitations:

- The single sample maximum *E. coli* limitation of 235 n/100 mL has been replaced with the current geometric mean of 126 n/100 mL reporting requirement; utilizing four sample results within a calendar month.

24. **Variances/Alternate Limits or Conditions:**

The current VPDES Permit Manual suggests that facilities at this design flow utilizing chlorine for disinfection, monitor bacteria at a frequency of 4 times per month (i.e. weekly). During the last permit term, the permittee monitored bacteria at a frequency of once per month with only one reported excursion. The current Water Quality Standards state that a geometric mean must be reported and that a minimum of four data points within a calendar month be utilized. Past performance of this facility allows for a reduced sampling frequency. Staff proposes that a frequency of once per week within a month during each calendar quarter be imposed. This reflects staff's current practice for relatively small sewage treatment plants and reflects the VPDES Permit Manual concerning monitoring reductions.

25. **Public Notice Information:**

First Public Notice Date: 8 January 2014 Second Public Notice Date: 15 January 2014

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3873, Douglas.Frasier@deq.virginia.gov. See **Attachment 12** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. **Additional Comments:**

Previous Board Action(s):	No Board actions.
Staff Comments:	No staff comments were recieved.
State/Federal Agency Comments:	United States Fish & Wildlife Service stated that this activity appeared to have no impacts to federally listed species or designated critical habitat and had no further comment.
Public Comment:	No comments were received during the public notice.

Fact Sheet Attachments

Table of Contents

Middleburg Academy
VA0027197
2014 Reissuance

ATTACHMENT 1

Flow Frequency Determination

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Notre Dame Academy STP - VA#0027197

TO: Doug Stockman, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: August 14, 1998

COPIES: Ron Gregory, Charles Martin, File

This memo supercedes my September 10, 1993 memo to Joan Crowther concerning the subject VPDES permit.

The Notre Dame Academy STP discharges to an unnamed tributary of the Goose Creek near Middleburg, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The values at the discharge point were determined by inspection of the USGS Rectortown Quadrangle topographical map which shows the receiving stream as intermittent at the discharge point. The flow frequencies for intermittent streams are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean. Flow frequencies have been provided for the first perennial point downstream of the outfall. This occurs on the Goose Creek above its confluence with the intermittent stream.

The VDEQ operated a continuous record gage on the Goose Creek near Middleburg, VA (#01643700) from 1965 to 1967 and from 1969 through 1996. The gage was located approximately 1000 feet upstream of the intermittent discharge receiving stream. The flow frequencies for the gage and the perennial point are presented below. The values at the perennial point are considered equal to those at the gage due to the close proximity of one to the other.

Goose Creek near Middleburg, VA (#01643700)
and at perennial point:

Drainage Area = 123 mi^2

1Q10 = 0.0 cfs	High Flow 1Q10 = 8.6 cfs
7Q10 = 0.0037 cfs	High Flow 7Q10 = 11 cfs
30Q5 = 1.55 cfs	HM = 0.0 cfs

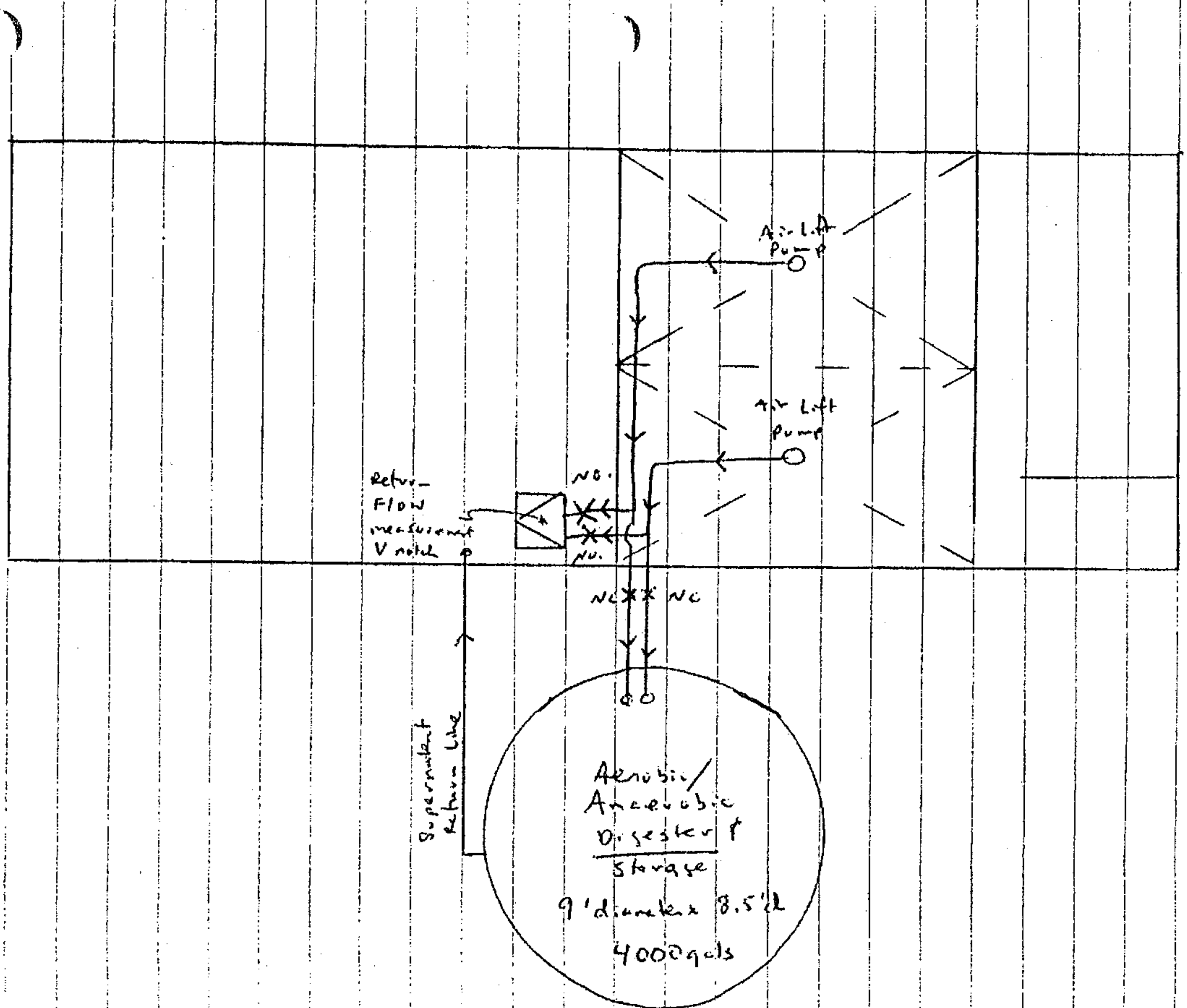
The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

Attachment 1

ATTACHMENT 2

Facility Schematic/Diagram

Attachment 2



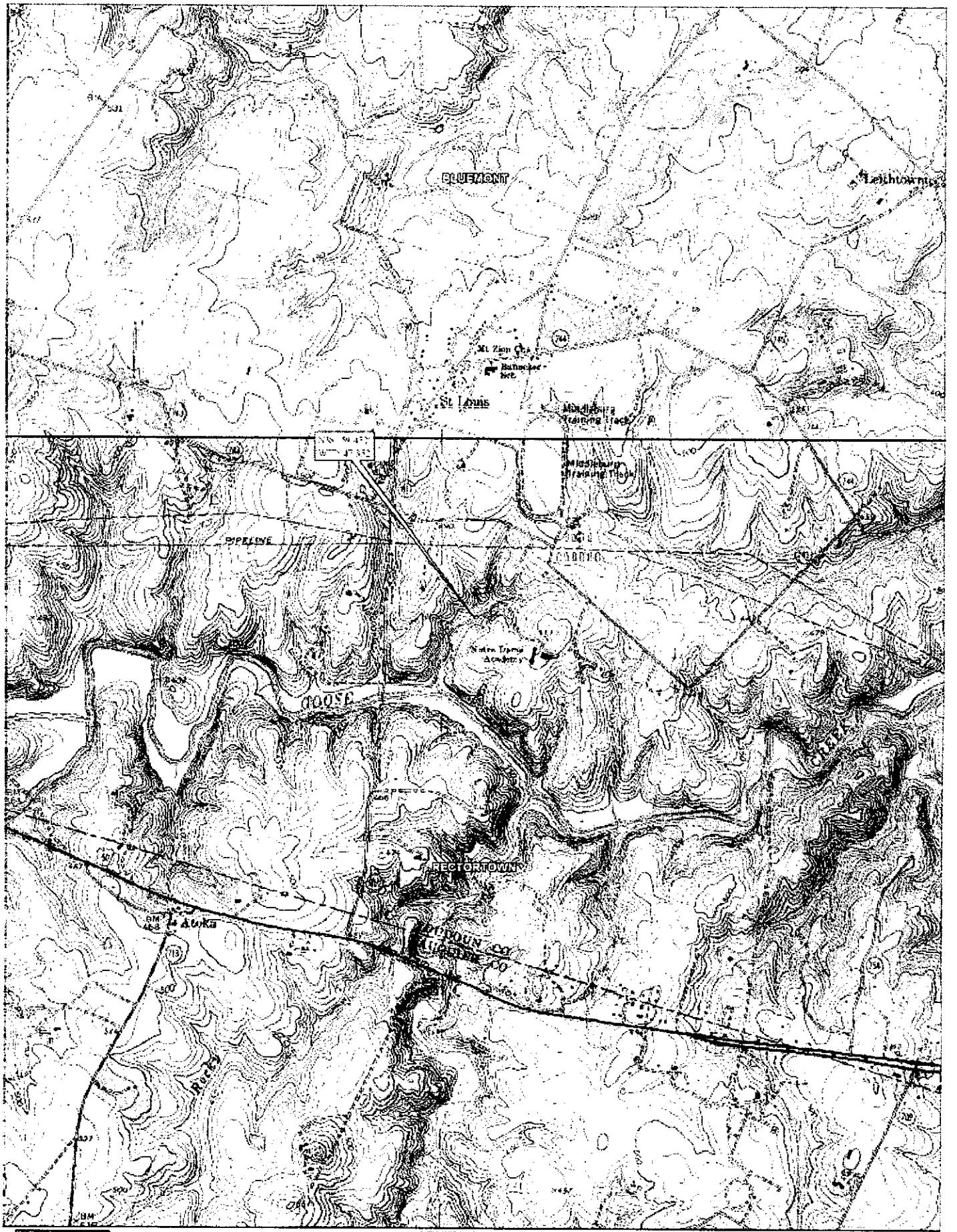
Notre Dame Academy
Wastewater Treatment Facility
Sludge Handling System

6/98
(NTS)

2

ATTACHMENT 3

Rectortown Topographic Map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ATTACHMENT 4

Technical Inspection Report

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
NORTHERN REGIONAL OFFICE
13901 Crown Court, Woodbridge, Virginia 22193
(703) 583-3800 Fax (703) 583-3801
www.deq.virginia.gov

Preston Bryant
Secretary of Natural Resources

David K. Paylor
Director

Thomas A. Faha
Regional Director

September 22, 2008

Mr. Cory Majtyka, Maintenance Supervisor
Notre Dame Academy STP
35321 Notre Dame Lane

Middleburg, VA 20117

Re: Notre Dame Academy STP – Permit #VA0027197

Dear Mr. Majtyka:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at Notre Dame Academy – Sewage Treatment Plant (STP) on August 22, 2008. The compliance staff would like to thank Steve Cawthron for his time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had Deficiencies for the laboratory inspection. Please note the requirements and recommendations addressed in the technical summary. Please submit in writing a progress report to this office by **October 22, 2008** for the items addressed. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format. Additional inspections may be conducted to confirm that the facility is in compliance with permit requirements.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Regional Office (NRO) at (703) 583-3882 or by E-mail at smmack@deq.virginia.gov.

Sincerely,

Sharon Mack

Sharon Mack
Environmental Specialist II

cc: Permits / DMR File
Compliance Manager
Compliance Auditor
Compliance Inspector
OWCP (Steve Stell)
Steve Cawthron - APEX

DEQ
WASTEWATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0027197	**April 23, 2004**		**April 22, 2009**

Facility Name	Address	Telephone Number
Notre Dame Academy STP	**35321 Notre Dame Lane Middleburg, VA 20117**	**540-687-5581**
Owner Name	Address	Telephone Number
Notre Dame Academy	**35321 Notre Dame Lane Middleburg, VA 20117**	**540-687-5581**
Responsible Official	Title	Telephone Number
Cory Majtyka	**Maintenance Supervisor**	**540-687-5581**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Steve Cawthron - APEX	**Class I; 1901000301**	**571-233-4510**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:		DESIGN:	
	Flow	**0.015**	
	Population Served	**Variable**	
	Connections Served	**1**	

EFFLUENT LIMITS: Mg/L unless otherwise specified

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow, MGD		**0.015**		**DO**	**5.0**		
pH, s.u.	**6.0**		**9.0**	**BOD_5**		**30**	**45**
TSS		**30**	**45**	**Ammonia-N**		**2.2**	**2.2**
TRC, chlorine contact tank	**1.0**			**TRC, final effluent**		**.008**	**.010**

	Receiving Stream	**Goose Creek, UT**	
	Basin	**Potomac River**	
	Discharge Point (LAT)	**38° 59' 27.10"**	
	Discharge Point (LONG)	**77° 47'.21.1"**	

Problems identified at last inspection, March 24, 2004:

		Corrected	Not Corrected
1.	Recommend that the facility ascertain the possible source(s) of the solids problem and provide, in writing, corrective measures to be employed to reduce Remedy the solids dilemma by May 28, 2004.	[X]	[ ]
3.	The O&M Manual should be updated to reflect the solids issue, the possible sources discovered, and corrective actions taken.	[X]	[ ]

Technical Inspection Summary, August 22, 2008

Comments:

- **The aeration basin and clarifier have been covered with grating to prevent leaves and debris from falling into the tanks.**
- **This facility has a history of documented solids loss through the outfall into the receiving stream (March 2004, March 2006).**
- **This facility also has had problems with violating the permit's ammonia-n limits, generally in the colder months of the year. Solids in the CCT have been given as part of the reason for these violations.**

Recommendations for action:

- **Several sections in the O&M Manual need to be updated as a result of changes in the plant operations, including the Immersion heaters added to the aeration basin, a baffle added to contain solids in aeration basin, and the DR100 is no longer used for Total Residual Chlorine analysis. An updated O&M will be required when the permit is reissued early next year.**

REV 5/00

VPDES NO. **VA0027197**

DEQ
WASTEWATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **August 22, 2008**

Date form completed: **September 12, 2008**

Inspection by: **Sharon Mack**

Inspection agency: **DEQ NRO**

Time spent: **15 hours**

Announced: **Yes**

Reviewed by: 9/22/08

Scheduled: **Yes**

Present at inspection: **Doug Frasier – DEQ**
Steve Cawthron - APEX

TYPE OF FACILITY:

Domestic

Industrial

[ ] Federal
[X] Nonfederal

[ ] Major
[X] Minor

[ ] Major
[ ] Minor

[ ] Primary
[ ] Secondary

Type of inspection:

[X] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **March 24, 2004**
Agency: **DEQ NRO**

Population served: approx. **variable**

Connections served: approx. **1**

Last month average: (Effluent) Month/year: **July 2008**

Flow:	**0.0011**	MGD	pH:	**7.0**	s.u.	DO	**7.49**	mg/L
BOD_5	**<QL**	mg/L	TSS	**6.49**	mg/L	Ammonia-N	**< QL**	mg/L
TRC, contact tank	**1.71**	mg/L	TRC, final effluent	**< QL**	mg/L			

Chorine Contact Tank values estimated- several daily analyses reported as > 2.0 mg/L

Quarter average: **(Effluent) May, June, July 2008**

Flow:	**0.0018**	MGD	pH:	**7.0**	s.u.	DO	**7.86**	mg/L
BOD_5	**6.7**	mg/L	TSS	**15.4**	mg/L	Ammonia-N	**.69**	mg/L
TRC, contact tank	**1.75**	mg/L	TRC, final effluent	**<QL**	mg/L			

TCC value estimated- several daily analyses reported as > 2.0 mg/L

DATA VERIFIED IN PREFACE [X] Updated [ ] No changes

Has there been any new construction? [ ] Yes [X] No

If yes, were plans and specifications approved? [ ] Yes [ ] No [X] NA

DEQ approval date: **NA**

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: I **1** II **1** III **Ø** IV **Ø** Trainee **Ø**
2. Hours per day plant is manned: **~ 1 hour per day**
3. Describe adequacy of staffing. [ ] Good [X] Average [ ] Poor
4. Does the plant have an established program for training personnel? [ ] Yes [X] No
5. Describe the adequacy of the training program. [ ] Good [X] Average [ ] Poor
6. Are preventive maintenance tasks scheduled? [X]Yes [ ] No
7. Describe the adequacy of maintenance. [X] Good [ ] Average [ ] Poor*
8. Does the plant experience any organic/hydraulic overloading?
   If yes, identify cause and impact on plant: [ ] Yes [X] No
9. Any bypassing since last inspection? [ ] Yes [X] No
10. Is the standby electric generator operational? [ ] Yes [ ] No* [X] NA
11. Is the STP alarm system operational? [ ] Yes [ ] No* [X] NA
12. How often is the standby generator exercised? **NA**
    Power Transfer Switch? **NA**
    Alarm System? **NA**
13. When was the cross connection control device last tested on the potable water service? **NA**
14. Is sludge being disposed in accordance with the approved sludge disposal plan?
    [X] Yes [ ] No [ ] NA
15. Is septage received by the facility? [ ] Yes [X] No
    Is septage loading controlled? [ ] Yes [ ] No [X] NA
    Are records maintained? [ ] Yes [ ] No [X] NA
16. Overall appearance of facility: [X] Good [ ] Average [ ] Poor

Comments:

5. Operators continue training on their own or through day jobs.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[X] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[X] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[X] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[X] NA

2. What does the operational log contain?

[X] Visual observations	[X] Flow measurement
[X] Laboratory results	[X] Process adjustments
[ ] Control calculations	[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[X] As built plans and specs	[ ] Spare parts inventory
[X] Manufacturers instructions	[X] Equipment/parts suppliers
[X] Lubrication schedules	[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? **NA**
(Municipal Only)

[ ] Waste characteristics	[ ] Locations and discharge types
[ ] Impact on plant	[ ] Other (specify)

Comments:

5. Which of the following records are kept at the plant and available to personnel?

[X] Equipment maintenance records	[X] Operational Log
[ ] Industrial contributor records	[X] Instrumentation records
[X] Sampling and testing records	

6. Records not normally available to plant personnel and their location: **None**

7. Were the records reviewed during the inspection? [X] Yes [ ] No

8. Are the records adequate and the O & M Manual current? [ ] Yes [X] No

9. Are the records maintained for the required 3-year time period? [X] Yes [ ] No

Comments:

7. Supporting documentation is sent to DEQ with the monthly DMR.

8. Several sections in the O&M Manual need to be updated as a result of changes in the plant operations.

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [X] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [X] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [X] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [ ] Yes [ ] No* [X] NA
5. Are composite samples refrigerated during collection? [ ] Yes [ ] No* [X] NA
6. Does plant maintain required records of sampling? [X] Yes [ ] No*
7. Does plant run operational control tests? [X] Yes [ ] No

Comments:

(D) TESTING

1. Who performs the testing? [X] Plant [ ] Central Lab [X] Commercial Lab
   DO, pH, TRC

   Name: **BOD5, TSS, Ammonia-N**
   ESS, Ltd., Culpeper

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **Hach Pocket Colorimeter II**
3. Does plant appear to have sufficient equipment to perform required tests? [X] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [X] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [X] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [X] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [X] NA

Comments:

UNIT PROCESS: Screening/Comminution

1.	Number of Units:	Manual:	**1**	Mechanical:	**1**
	Number in operation:	Manual:	**1**	Mechanical:	**1**
2.	Bypass channel provided: Bypass channel in use:		[**X**] Yes [**X**] Yes	[ ] No* [ ] No	
3.	Area adequately ventilated:		[**X**] Yes	[ ] No*	
4.	Alarm system for equipment failure or overloads:		[ ] Yes	[**X** No*	
5.	Proper flow distribution between units:		[ ] Yes	[ ] No	[**X**] NA
6.	How often are units checked and cleaned?		**Daily**		
7.	Cycle of operation:		**Continuous**		
8.	Volume of screenings removed:		**Not measured**		
9.	General condition:	[**X**] Good	[ ] Fair	[ ] Poor	

Comments:

1. **Influent enters the plant though both the comminutor and the bar screen.**

- **The line to the aeration basin is valved so that flow can be diverted to the anaerobic digester (holding tank) when maintenance on the tanks is needed.**

UNIT PROCESS: Flow Measurement

[ ] Influent [ ] Intermediate [X] Effluent

1. Type measuring device:

2. Present reading:

3. Bypass channel: [ ] Yes [ ] No
   Metered: [ ] Yes [ ] No

4. Return flows discharged upstream from meter: [ ] Yes [ ] No
   Identify:

5. Device operating properly: [ ] Yes [ ] No*

6. Date of last calibration:

7. Evidence of following problems:

   a. obstructions [ ] Yes* [ ] No
   b. grease [ ] Yes* [ ] No

8. General condition: [ ] Good [ ] Fair [ ] Poor

Comments:

1. **Flow is estimated based on the water usage as measured by meters on the wells.**

UNIT PROCESS: Activated Sludge Aeration

1. Number of units: **1** In operation: **1**

2. Mode of operation: **Extended aeration**

3. Proper flow distribution between units: [ ] Yes [ ] No* [X] NA

4. Foam control operational: [X] Yes [ ] No* [ ] NA

5. Scum control operational: [X] Yes [ ] No* [ ] NA

6. Evidence of following problems:
   a. dead spots [ ] Yes* [X] No
   b. excessive foam [ ] Yes* [X] No
   c. poor aeration [ ] Yes* [X] No
   d. excessive aeration [ ] Yes* [X] No
   e. excessive scum [ ] Yes* [X] No
   f. aeration equipment malfunction [ ] Yes* [X] No
   g. other (identify in comments) [ ] Yes* [X] No

7. Mixed liquor characteristics (as available):
   DO: **4-6 mg/L**
   Color: **Light brown**
   Odor: **None**
   Settleability: **~ 25 ml/L**

8. Return/waste sludge:
   A. Return Rate: **not measured**
   B. Waste Rate: **10-15 minutes**
   C. Frequency of Wasting: **Once per week**

9. Aeration system control: [X] Time Clock [ ] Manual [ ] Continuous [ ] Other (explain)

10. Effluent control devices working properly (oxidation ditches): [ ] Yes [ ] No* [X] NA

11. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

4. Foam is not generally a problem, but when needed, water from the chlorine contact tank is used to manually spray down the surface.

6. The aeration basin is now covered, making it a little harder to evaluate. Grates were lifted for clear view of basin.

7. The school year started up the week after this inspection- low flow over the summer resulted in very thin mixed liquor and low bug population. The operator planed to seed the aeration basin on Aug. 23 with Mixed Liquor from Foxcroft School STP

9. The plant has 2 blowers that run alternately.

- **Immersion heaters were added last fall to assist in maintaining microbial populations and improve removal of ammonia-N in cold weather.**

- **Lime is added to the aeration basin for pH adjustment.**

UNIT PROCESS: Sedimentation

[ ] Primary [X] Secondary [ ] Tertiary

1.	Number of units: **1**	In operation: **1**		
2.	Proper flow distribution between units:	[ ] Yes	[ ] No*	[X] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[X] No	
4.	Effluent weirs level: Clean:	[X] Yes [X] Yes	[ ] No* [ ] No*	
5.	Scum collection system working properly:	[X] Yes	[ ] No*	[ ] NA
6.	Sludge collection system working properly:	[X] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[X] Yes	[ ] No*	
8.	Chemical addition: Chemicals:	[X] Yes	[ ] No	
9.	Effluent characteristics:	**Slightly cloudy**		
10.	General condition:	[X] Good	[ ] Fair	[ ] Poor

Comments:

4. **Sides of the effluent channel have been perforated so water can enter from below surface level. The water surface is kept slightly below the weir so that most of water in the clarifier enters effluent channel through the perforations. The allows a little extra room in the clarifier to allow for surges in the water level, such as during/after basketball games, when population is large than normal.**

5. **Floating solids are collected by the skimmers and skimmed manually.**

- **RAS /WAS is transported via air lift pump.**

UNIT PROCESS: Anaerobic Digestion –Sludge Holding Tank

1. Number of units: **1** In operation: **1**

2. Type of sludge digested: **Waste Activated Sludge**

3. Type of digester: [ ] Primary [ ] High rate [ ] Secondary [X] Standard rate

4. Frequency of sludge application to digesters: **Once per week**

5. Number of recirculation pumps: **0** In operation: **0**

6. Sludge retention time:

7. Provisions for pH adjustment: [X] Yes [ ] No
   Utilized: [X] Yes [ ] No [ ] NA

8. Location of supernatant return in the plant: [ ] Head [ ] Primary [X] Other(specify): **Aeration Basin**
   Supernatant return rate: **Not measured**

9. Gas production rate: **Not measured**

10. Process control testing:
    a. reduction of volatile solids: [ ] Yes [X] No
    b. volatile acids: [ ] Yes [X] No
    c. pH [ ] Yes [X] No
    d. temperature: [ ] Yes [X] No
    e. alkalinity: [ ] Yes [X] No

11. Signs of overloading: [ ] Yes* [X] No

12. General condition: [X] Good [ ] Fair [ ] Poor

Comments:

- **Sludge from holding tank is pumped and hauled to the Loudoun Water Receiving Station for the Blue Plains interceptor line.**

UNIT PROCESS: Chlorination

1 No. of chlorinators: **1** In operation: **1**

2. No. of evaporators: **0** In operation: **0**

3. No. of chlorine contact tanks: **1** In operation: **1**

4. Proper flow distribution between units: [ ] Yes [ ] No* [**X**] NA

5. How is chlorine introduced into the wastewater?
   [ ] Perforated diffusers
   [ ] Injector with single entry point
   [**X**] Other **Tablet feeder w/ three tubes**

6. Chlorine residual in basin effluent: **>2.2 mg/L measured by S. Cawthron @ 1434**
   2.06 mg/L measured by S. Mack @ 1450

7. Applied chlorine dosage: **Topped off as needed**

8. Contact basins adequately baffled: [**X**] Yes [ ] No*

9. Adequate ventilation:
   a. cylinder storage area [ ] Yes [ ] No* [**X**] NA
   b. equipment room [ ] Yes [ ] No* [**X**] NA

10. Proper safety precautions used: [**X**] Yes [ ] No*

11. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

- **The sample for TRC in the chlorine contact tank is collected at one of six different sample locations, based on a calculated 30 minute contact time for various flow levels.**

UNIT PROCESS: Dechlorination

1. Chemical used:	[ ] Sulfur Dioxide		[X] Bisulfite	[ ] Other
2. No. of sulfonators:	**0**	In operation:		**0**
3. No. of evaporators:	**0**	In operation:		**0**
4. No. of chemical feeders:	**1**	In operation:		**1**
5. No. of contact tanks:	**1**	In operation:		**1**
6. Proper flow distribution between units:		[ ] Yes	[ ] No*	[X] NA

7. How is chemical introduced into the wastewater?
   [ ] Perforated diffusers
   [ ] Injector with single entry point
   [X] Other **Tablet feeder with two tubes**

8. Control system operational:	[ ] Yes	[X] No*	
a. residual analyzers:	[ ] Yes	[X] No*	
b. system adjusted:	[ ] Automatic	[X] Manual	[ ] Other:

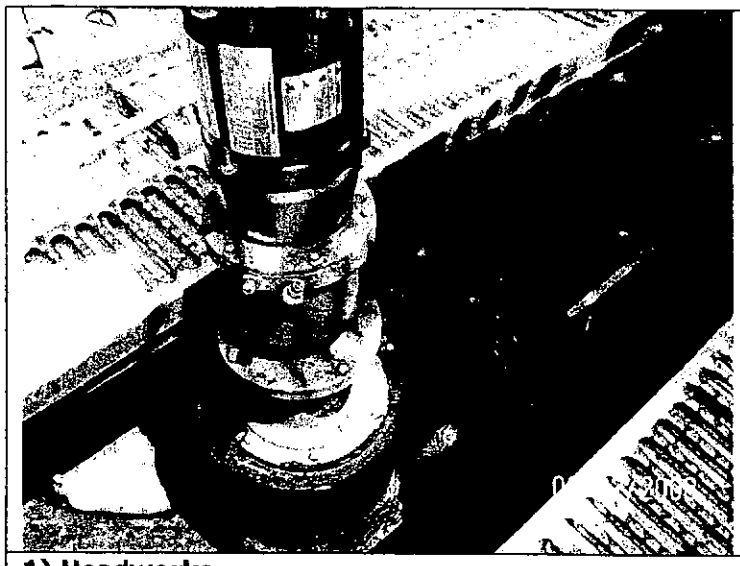
9. Applied dechlorination dose: **Topped off as needed**

10. Chlorine residual in basin effluent: **<QL measured by S. Mack @ 1459**

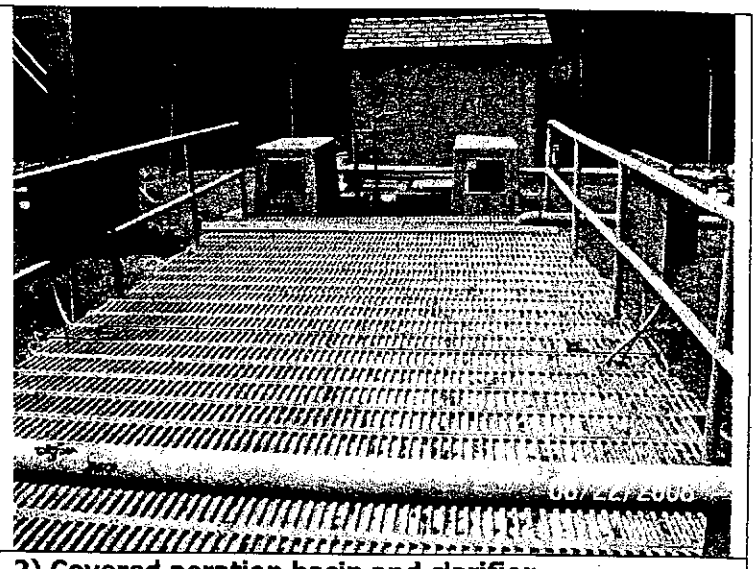
11. Contact basins adequately baffled:	[ ] Yes	[ ] No*	[X] NA
12. Adequate ventilation:			
a. cylinder storage area:	[ ] Yes	[ ] No*	[X] NA
b. equipment room:	[ ] Yes	[ ] No*	[X] NA
13. Proper safety precautions used:	[X] Yes	[ ] No*	
14. General condition:	[X] Good	[ ] Fair	[ ] Poor

Comments:

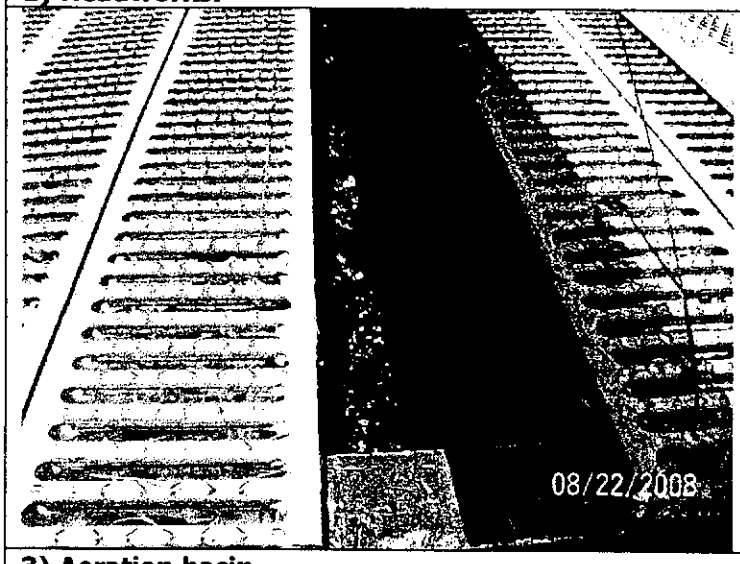
10. Tablet feeder and discharge pipe act as the contact tank.



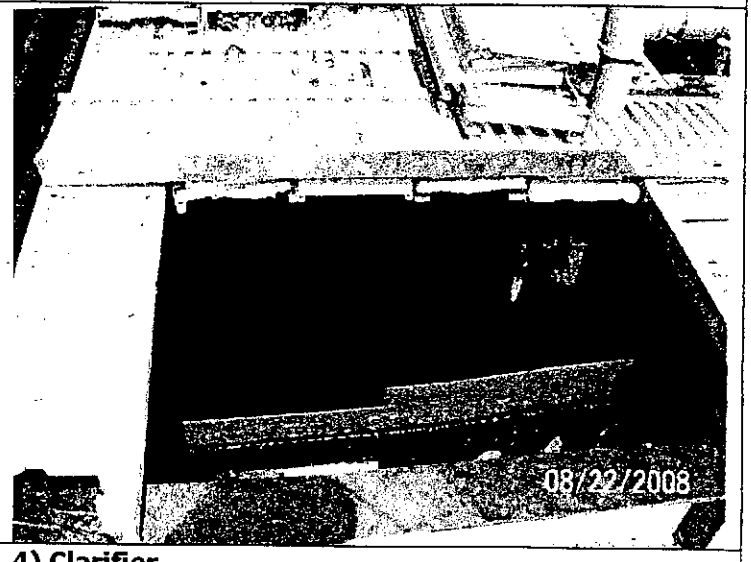
1) Headworks.



2) Covered aeration basin and clarifier.



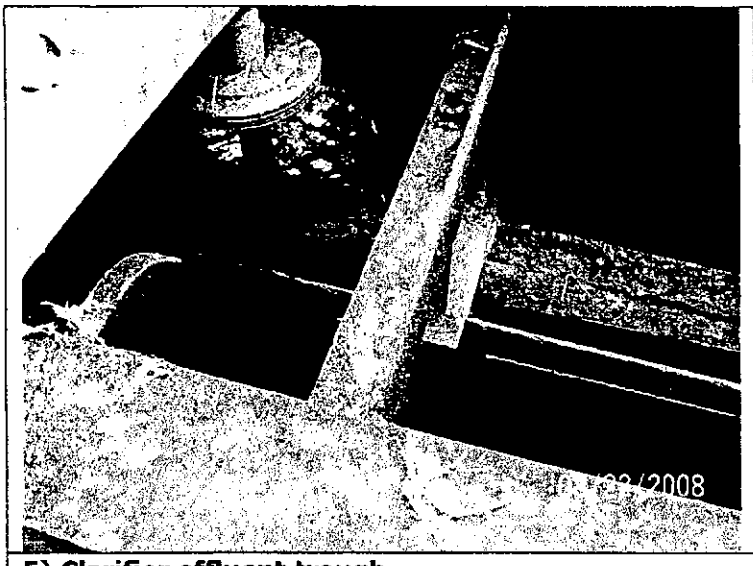
3) Aeration basin.



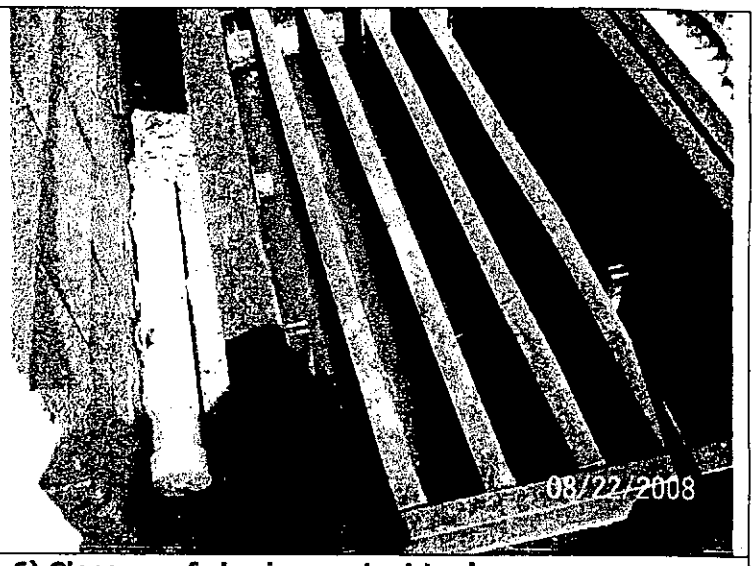
4) Clarifier

Facility Name: Notre Dame Academy STP
Site Inspection Date: August 22, 2008

VPDES Permit No. VA0027197
Photos & Layout by: Sharon Mack

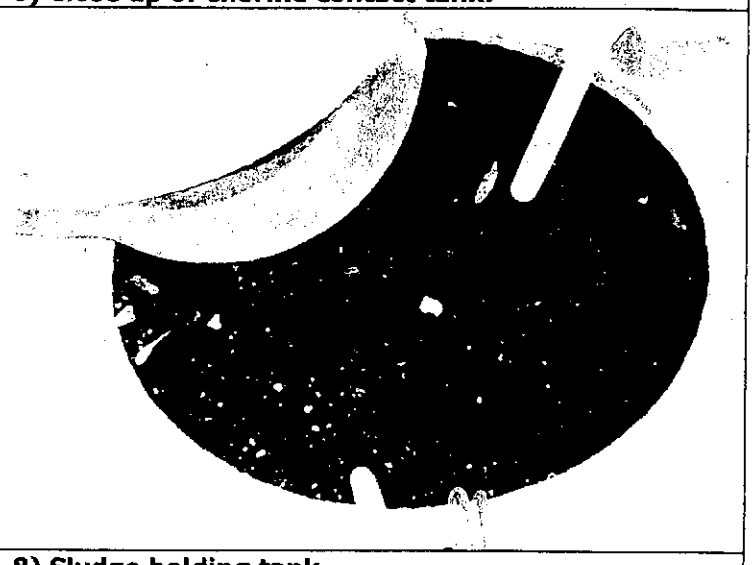


5) Clarifier effluent trough.



6) Close up of chorine contact tank.

7) Chlorination/dechlorination.



8) Sludge holding tank.

Facility Name: Notre Dame Academy STP
Site Inspection Date: August 22, 2008

VPDES Permit No. VA0027197
Photos & Layout by: Sharon Mack

UNIT PROCESS: Effluent/Plant Outfall

1.	Type Outfall	[X] Shore based		[ ] Submerged	
2.	Type if shore based:	[ ] Wingwall		[X] Headwall	[X] Rip Rap
3.	Flapper valve:	[ ] Yes	[X] No	[ ] NA	
4.	Erosion of bank:	[ ] Yes	[X] No	[ ]NA	
5.	Effluent plume visible?	[ ] Yes*	[X]No		
6.	Condition of outfall and supporting structures:			[X] Good	[ ] Fair [ ] Poor*

7. Final effluent, evidence of following problems:

a.	oil sheen	[ ] Yes*	[X] No
b.	grease	[ ] Yes*	[X] No
c.	sludge bar	[ ] Yes*	[X] No
d.	turbid effluent	[ ] Yes*	[X] No
e.	visible foam	[ ] Yes*	[X] No
f.	unusual color	[ ] Yes*	[X] No

Comments:

DEPARTME... OF ENVIRONMENTAL QUALITY - W... ER DIVISION
LABORATORY INSPECTION REPORT

10/01

FACILITY NO: VA0027197	INSPECTION DATE: August 22, 2008	PREVIOUS INSP. DATE: March 28, 2004	PREVIOUS EVALUATION: Deficiencies	TIME SPENT: 2 hrs

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?
Notre Dame Academy STP 35321 Notre Dame Lane Middleburg, VA 20117	( ) MAJOR ( ) MINOR (X) SMALL ( ) VPA/NDC	(X) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	( ) YES (X) NO **FY-SCHEDULED INSPECTION?** (X) YES ( ) NO

INSPECTOR(S):	REVIEWERS:	PRESENT AT INSPECTION:
Sharon Mack	9/22/08	Doug Frasier – DEQ Steve Cawthron - APEX

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS	X	
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES		X
TOTAL RESIDUAL CHLORINE ANALYSIS PROCEDURES		X

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
Y	REPLICATE SAMPLES	pH, TRC	Once every 20 samples
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH, TRC	Each day of analysis
N	SPLIT SAMPLES		
Y	SAMPLE BLANKS	TRC	Each day of analysis
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency (X) NA	

FACILITY #: **VA0027197**

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE		CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD	X	INSTRUMENT MAINTENANCE
				X	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES	X	CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: **July 2008**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?			X
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?			X
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: **BOD5, TSS, ammonia-N** **ESS, Ltd.** **P.O. Box 520** **Culpeper, VA 22701**	X		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	X		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?			X

FACILITY NAME: Notre Dame STP	FACILITY NO: VA0027197	INSPECTION DATE: August 22, 2008
(X) Deficiencies	( ) No Deficiencies	

LABORATORY RECORDS

The Laboratory Records section had **No Deficiencies** noted during the inspection.

- **The Demonstration of Operator Competency required under the 40 CFR Part 136 rules update effective September 2007 has not been done.**
- **The operator's bench sheets for pH, DO, Temperature, and TRC reference Standard Methods 17th edition. This edition is no longer valid for compliance purposes. Additionally, The method cited for pH is incorrect. The bench sheets must be updated to reflect that the facility is using approved methods for pH, DO, and TRC.**

GENERAL SAMPLING AND ANALYSIS

The General Sampling and Analysis section had **No Deficiencies** noted during the inspection.

LABORATORY EQUIPMENT

The Laboratory Equipment section had **No Deficiencies** noted during the inspection.

INDIVIDUAL PARAMETERS

pH

The analysis for the parameter of pH had **No Deficiencies** noted during the inspection.

Dissolved Oxygen (DO)

The analysis for the parameter of DO had **No Deficiencies** noted during the inspection.

- **This analysis was observed and evaluated with the operator during a Technical Facility Inspection at Foxcroft School STP in March 2008. It was not re-evaluated during this inspection.**

Total Residual Chlorine (TRC)

The analysis for the parameter of TRC had **No Deficiencies** noted during the inspection.

COMMENTS

The staff should check the DEQ website at http://www.deq.state.va.us/vpdes/checklist.html and download the most recent inspection check sheets to keep up to date with changes in minimal laboratory requirements.

ANALYST:	**Steve Cawthron**	VPDES NO	**VA0027197**

Parameter: Hydrogen Ion (pH
Method: HACH 17-N pH Test Kit
04/01

METHOD OF ANALYSIS:

X	MANUFACTURERS INSTRUCTIONS

		Y	N
1)	Does the facility treat domestic wastewater and have a design flow ≤ to 0.040 MGD? [Permit]	X	
2)	Was sample dechlorinated using sodium thiosulfate? [Notes A]	X	
3)	Are the vials clean and in good condition? [Permit]	X	
4)	Is the color disc in good condition? [Permit]	X	
5)	Are both vials used? [4]	X	
6)	Are vials rinsed with sample prior to testing? [1]	X	
7)	Is the proper volume of sample used? [1]	X	
8)	Is the proper volume of indicator added? [2]	X	
9)	Is the comparator held in front of a uniform light source or background? [5]	X	

COMMENTS:	**2) Final effluent is dechlorinated with sodium bisulfite tablets.**
PROBLEMS:	**None noted or discussed**

ANALYST:	**Steve Cawthron**	VPDES NO	**VA0027197**

Parameter: Total Residual Chlorine
Method: DPD Colorimetric (HACH Pocket Colorimeter™)
01/08

Instrument: **Hach Pocket Colorimeter II**

METHOD OF ANALYSIS:

X	HACH Manufacturer's Instructions (Method 8167) plus an edition of Standard Methods
	18th Edition of Standard Methods 4500-Cl G
	21st Edition of Standard Methods 4500-Cl G (00)

		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? NOTE: Analyze 4 samples of known TRC. Must use a lot number or source that is different from that used to prepare calibration standards. May not use Spec√ ™. [SM 1020 B.1]		X
2)	Are the DPD PermaChem® Powder Pillows stored in a cool, dry place? [Mfr.]	X	
3)	Are the pillows within the manufacturer's expiration date? [Mfr]	X	
4)	Has buffering capability of DPD pillows been checked annually? (Pillows should adjust sample pH to between 6 and 7) [Mfr]	X	
5)	When pH adjustment is required, is H_2SO_4 or NaOH used? [11.3.1]	X	
6)	Are cells clean and in good condition? [Mfr]	X	
7)	Is the low range (0.01-mg/L resolution) used for samples containing residuals from 0-2.00 mg/L? [Mfr.]	X	
8)	Is calibration curve developed (may use manufacturer's calibration) with daily verification using a high and a low standard? NOTE: May use manufacturer's installed calibration and commercially available chlorine standards for daily calibration verifications. [18th ed. 1020 B.5; 21st ed. 4020 B.2.b]	NA	
9)	Is the 10-mL cell (2.5-cm diameter) used for samples from 0-2.00 mg/L? [Mfr.]	X	
10)	Is the meter zeroed correctly by using sample as blank for the cell used? [Mfr.]	X	
11)	Is the instrument cap placed correctly on the meter body when the meter is zeroed and when the sample is analyzed? [Mfr.]	X	
12)	Is the DPD Total Chlorine PermaChem® Powder Pillow mixed into the sample? [HACH 11.1]	X	
13)	Is the analysis made at least three minutes but not more than six minutes after PermaChem® Powder Pillow addition? [11.2]	X	
14)	If read-out is flashing [2.20], is sample diluted correctly, then reanalyzed? [1.2 & 2.0]	X	
15)	Are samples analyzed within 15 minutes of collection? [40 CFR Part 136]	X	
16)	~~Is a duplicate sample analyzed after every 20 samples if citing 18th Edition [SM 1020 B.6] or daily for 21st Edition [SM 4020 B.3.c]?~~	NA	
17)	~~If duplicate sample is analyzed, is the relative percent difference (RPD) ≤ 20? [18th ed. Table 1020 I; 21st ed. DEQ]~~	NA	

COMMENTS:	**4) Done monthly.**
PROBLEMS:	**None noted or discussed**

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET
Revised 3/08 [40 CFR, Part 136.3, Table II]

FACILITY NAME:	**Notre Dame Academy STP**	VPDES NO	**VA0027197**	DATE:	**August 22, 2008**

HOLDING TIMES						SAMPLE CONTAINER				PRESERVATION				
PARAMETER	APPROVED	MET?		LOGGED?		ADEQ. VOLUME		APPROP. TYPE		APPROVED	MET?		CHECKED?	
		Y	N	Y	N	Y	N	Y	N		Y	N	Y	N
BOD5 & CBOD5	48 HOURS	X		X		X		X		ANALYZE 2 HRS or 6°C	X		X	
TSS	7 DAYS									6°C	X		X	
pH	15 MIN.	X		X		X		X		N/A				
CHLORINE	15 MIN.	X		X		X		X		N/A				
DISSOLVED 0_2	15 MIN./IN SITU	X		X		X		X		N/A				
AMMONIA	28 DAYS	X		X		X		X		6°C + H_2S0_4 pH<2 DECHLOR	X		X	

COMMENTS:	**For analyses run at the plant, operators should distinguish between AM and PM on the bench sheets.**
PROBLEMS:	**According to the Chain of Custody form for samples collected 6/15/08, the person delivering the samples to ESS in Culpeper relinquished them at 1044 AM, but the lab did not receive them until 1056 AM. Legal Chain of Custody was not maintained.**

ATTACHMENT 5

Planning Statement

To:	Douglas Frasier
From:	Jennifer Carlson
Date:	16 October 2013
Subject:	Planning Statement for Middleburg Academy
Permit Number:	VA0027197

Information for Outfall 001:

Discharge Type:	Municipal, minor
Discharge Flow:	0.015 MGD
Receiving Stream:	Goose Creek, UT
Latitude / Longitude:	38° 59' 27.1" / 77° 47' 21.1"
Rivermile:	0.32
Streamcode:	1aXDV
Waterbody:	VAN-A05R
Water Quality Standards:	Class III, Section 9
Drainage Area:	0.3 square miles

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges into an unnamed tributary to Goose Creek. This unnamed tributary flows into Goose Creek 0.3 miles downstream of Outfall 001. There is a DEQ water quality monitoring station on Goose Creek located approximately 0.2 miles upstream of this confluence. Station 1aGOO030.75 is located at the at Route 611 bridge crossing. The following is the water quality summary for this segment of Goose Creek, as taken from the Draft 2012 Integrated Report*:

   Class III, Section 9.

   The DEQ ambient monitoring station located on this segment of Goose Creek:
   - *1aGOO030.75, at Route 611*

   E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. This impairment is nested within the downstream completed bacteria TMDL for Goose Creek.

   The aquatic life use is considered fully supporting. The data collected by the citizen monitoring group indicate that a water quality issue may exist; however, the methodology and/or data quality has not been approved for such a determination. Citizen monitoring finds a medium probability of adverse conditions for biota, and is noted by an observed effect for the aquatic life use.

   The wildlife use is considered fully supporting. The fish consumption use was not assessed.

   The nearest downstream monitoring station is 1aGOO022.44 located approximately 8.1 miles downstream of Outfall 001 on Goose Creek at the Route 734 bridge crossing. The following is the

water quality summary for this segment of Goose Creek, as taken from the Draft 2012 Integrated Report*:

Class III, Section 9.

The following is the DEQ monitoring station located on this segment of Goose Creek:

- *1aGOO022.44, at Route 734*
- *1aGOO021.28, downstream of Route 734 (freshwater probabilistic)*

Biological and associated chemical monitoring indicate that the aquatic life, recreation, fish consumption and wildlife uses are fully supporting. Citizen monitoring finds a medium probability of adverse conditions for biota, however subsequent DEQ biological monitoring has found this segment to be fully supporting for the benthics.

**Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   No.

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

   Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the Draft 2012 Integrated Report*							
Goose Creek	Recreation	*E. coli*	0.3 miles	Goose Creek Watershed Bacteria 05/01/2003	4.16E+10 cfu/year fecal coliform	200 cfu/100ml FC --- 0.015 MGD	Modified 10/27/06
	Aquatic Life	Benthic Macroinvertebrates	25.2 miles	Goose Creek Watershed Benthic 04/26/2004	0.7 tons/yr TSS	30 mg/L TSS --- 0.015 MGD	N/A
	Fish Consumption	PCBs	24.1 miles	No	---	---	2018

**Virginia's Draft 2012 Integrated Report (IR) has been through the public comment period and reviewed by EPA. The 2012 IR is currently awaiting final approval.*

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

   There are several downstream portions of Goose Creek listed with a PCB impairment. The PCB impairment begins in the downstream segment of Goose Creek Reservoir, approximately 24 miles downstream of Outfall 001. In support for the PCB TMDL that is scheduled for development by 2016 for the tidal Rappahannock River, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal discharger with. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as this facility is not expected to be a source of, or discharge PCBs. Based upon this information, this facility will not be requested to monitor for low-level PCBs.

   There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

   There are no public water supply intakes located within 5 miles of this discharge.

ATTACHMENT 6

Water Quality Criteria / Wasteload Allocation Analysis

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Middleburg Academy Permit No.: VA0027197

Receiving Stream: Goose Creek, UT Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	MGD
7Q10 (Annual) =	MGD
30Q10 (Annual) =	MGD
1Q10 (Wet season) =	MGD
30Q10 (Wet season) =	MGD
30Q5 =	MGD
Harmonic Mean =	MGD

Mixing Information

Annual - 1Q10 Mix =	%
- 7Q10 Mix =	%
- 30Q10 Mix =	%
Wet Season - 1Q10 Mix =	%
- 30Q10 Mix =	%

Effluent Information

Mean Hardness (as CaCO3) =	50 mg/L
90% Temp (Annual) =	25 deg C
90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	6.5 SU
Discharge Flow =	0.015 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.22E+00	na	--	1.99E+01	2.22E+00	na	--	--	--	--	--	--	--	--	--	1.99E+01	2.22E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	4.23E+00	na	--	1.99E+01	4.23E+00	na	--	--	--	--	--	--	--	--	--	1.99E+01	4.23E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	1.8E+00	6.6E-01	na	--	1.8E+00	6.6E-01	na	--	--	--	--	--	--	--	--	--	1.8E+00	6.6E-01	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	3.2E+02	4.2E+01	na	--	3.2E+02	4.2E+01	na	--	--	--	--	--	--	--	--	--	3.2E+02	4.2E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	7.0E+00	5.0E+00	na	--	7.0E+00	5.0E+00	na	--	--	--	--	--	--	--	--	--	7.0E+00	5.0E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	4.9E+01	5.6E+00	na	--	4.9E+01	5.6E+00	na	--	--	--	--	--	--	--	--	--	4.9E+01	5.6E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	1.0E+02	1.1E+01	na	4.6E+03	1.0E+02	1.1E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.0E+02	1.1E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.6E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol [C]	0	5.3E+00	4.0E+00	na	3.0E+01	5.3E+00	4.0E+00	na	3.0E+01	--	--	--	--	--	--	--	--	5.3E+00	4.0E+00	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	1.0E+00	--	na	--	1.0E+00	--	na	--	--	--	--	--	--	--	--	--	1.0E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	6.5E+01	6.6E+01	na	2.6E+04	6.5E+01	6.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	6.5E+01	6.6E+01	na	2.6E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
   Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	3.9E-01
Chromium III	2.5E+01
Chromium VI	6.4E+00
Copper	2.8E+00
Iron	na
Lead	3.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	6.8E+00
Selenium	3.0E+00
Silver	4.2E-01
Zinc	2.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

ATTACHMENT 7

June 2009 – September 2013 Effluent Data

DMR QA/QC

Permit #:VA0027197

Facility:Middleburg Academy

Rec'd	Parameter Description	QTY AVG	Lim Avg	QTY MAX	Lim Max	Quantity Unit Lim	CONC MIN	Lim Min	CONC AVG	Lim Avg	CONC MAX	Lim Max	Concentration Unit Lim.
08-Jun-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Jul-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
11-Aug-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Sep-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
07-Oct-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
10-Nov-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Dec-2009	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-Jan-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-Feb-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Mar-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.20	2.2	0.20	2.2	MG/L
09-Apr-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-May-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
10-Jun-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	1.34	2.2	1.34	2.2	MG/L
07-Jul-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Aug-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
10-Sep-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
12-Oct-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
02-Nov-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Dec-2010	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Jan-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Feb-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Mar-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	2.96	2.2	2.96	2.2	MG/L
08-Apr-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.7	2.2	0.7	2.2	MG/L
04-May-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.23	2.2	0.23	2.2	MG/L
10-Jun-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
07-Jul-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Aug-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Sep-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
11-Oct-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Nov-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Dec-2011	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Jan-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.56	2.2	0.56	2.2	MG/L
08-Feb-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.28	2.2	0.28	2.2	MG/L
08-Mar-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L

03-Apr-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
10-May-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Jun-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
10-Jul-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Aug-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Sep-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-Oct-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Nov-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
06-Dec-2012	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
11-Jan-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
07-Feb-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	0.22	2.2	0.22	2.2	MG/L
08-Mar-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Apr-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-May-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
07-Jun-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
09-Jul-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-Aug-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
05-Sep-2013	AMMONIA, AS N	NULL	*********	NULL	*********	NULL	NULL	*********	<QL	2.2	<QL	2.2	MG/L
08-Jun-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Jul-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
11-Aug-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Sep-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
07-Oct-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
10-Nov-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Dec-2009	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
05-Jan-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
05-Feb-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Mar-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Apr-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
05-May-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
10-Jun-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
07-Jul-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
06-Aug-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
10-Sep-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
12-Oct-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
02-Nov-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
09-Dec-2010	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
06-Jan-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
08-Feb-2011	BOD5	0.09	1.7	0.09	2.6	KG/D	NULL	*********	5	30	5	45	MG/L
08-Mar-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
08-Apr-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
04-May-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L
10-Jun-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	*********	<QL	30	<QL	45	MG/L

07-Jul-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Aug-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Sep-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
11-Oct-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Nov-2011	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Dec-2011	BOD5	0.01	1.7	0.01	2.6	KG/D	NULL	**********	6	30	6	45	MG/L
06-Jan-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Feb-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Mar-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
03-Apr-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
10-May-2012	BOD5	0.02	1.7	0.02	2.6	KG/D	NULL	**********	6	30	6	45	MG/L
08-Jun-2012	BOD5	0.01	1.7	0.01	2.6	KG/D	NULL	**********	6	30	6	45	MG/L
10-Jul-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Aug-2012	BOD5	0.007	1.7	0.007	2.6	KG/D	NULL	**********	6	30	6	45	MG/L
06-Sep-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
05-Oct-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
06-Nov-2012	BOD5	0.04	1.7	0.04	2.6	KG/D	NULL	**********	5	30	5	45	MG/L
06-Dec-2012	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
11-Jan-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
07-Feb-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Mar-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Apr-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-May-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
07-Jun-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
09-Jul-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
05-Aug-2013	BOD5	0.013	1.7	0.013	2.6	KG/D	NULL	**********	5	30	5	45	MG/L
05-Sep-2013	BOD5	<QL	1.7	<QL	2.6	KG/D	NULL	**********	<QL	30	<QL	45	MG/L
08-Jun-2009	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
09-Jul-2009	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
11-Aug-2009	PH	NULL	**********	NULL	**********	NULL	7	6.0	NULL	**********	7.5	9.0	SU
09-Sep-2009	PH	NULL	**********	NULL	**********	NULL	7.5	6.0	NULL	**********	7.5	9.0	SU
07-Oct-2009	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
10-Nov-2009	PH	NULL	**********	NULL	**********	NULL	7	6.0	NULL	**********	7.5	9.0	SU
09-Dec-2009	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
05-Jan-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
05-Feb-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
09-Mar-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
09-Apr-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
05-May-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
10-Jun-2010	PH	NULL	**********	NULL	**********	NULL	7	6.0	NULL	**********	7.5	9.0	SU
07-Jul-2010	PH	NULL	**********	NULL	**********	NULL	6.5	6.0	NULL	**********	7.5	9.0	SU
06-Aug-2010	PH	NULL	**********	NULL	**********	NULL	7	6.0	NULL	**********	7.5	9.0	SU
10-Sep-2010	PH	NULL	**********	NULL	**********	NULL	7	6.0	NULL	**********	7.5	9.0	SU

12-Oct-2010	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
02-Nov-2010	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
09-Dec-2010	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7	9.0	SU
06-Jan-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Feb-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Mar-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Apr-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
04-May-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
10-Jun-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
07-Jul-2011	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
08-Aug-2011	PH	NULL	*********	NULL	*********	NULL	7.5	6.0	NULL	*********	7.5	9.0	SU
08-Sep-2011	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
11-Oct-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Nov-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Dec-2011	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
06-Jan-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Feb-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Mar-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
03-Apr-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
10-May-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7	9.0	SU
08-Jun-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
10-Jul-2012	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
08-Aug-2012	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
06-Sep-2012	PH	NULL	*********	NULL	*********	NULL	7.5	6.0	NULL	*********	7.5	9.0	SU
05-Oct-2012	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
06-Nov-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
06-Dec-2012	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
11-Jan-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
07-Feb-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Mar-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-Apr-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
08-May-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
07-Jun-2013	PH	NULL	*********	NULL	*********	NULL	6.5	6.0	NULL	*********	7.5	9.0	SU
09-Jul-2013	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
05-Aug-2013	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
05-Sep-2013	PH	NULL	*********	NULL	*********	NULL	7	6.0	NULL	*********	7.5	9.0	SU
										90th	7.5		
										10th	6.5		
08-Jun-2009	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	*********	6.83	30	6.83	45	MG/L
09-Jul-2009	TSS	0.01	1.7	0.01	2.6	KG/D	NULL	*********	8.04	30	8.04	45	MG/L
11-Aug-2009	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	*********	31.4	30	31.4	45	MG/L
09-Sep-2009	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	*********	5.87	30	5.87	45	MG/L

07-Oct-2009	TSS	0.01	1.7	0.01	2.6	KG/D	NULL	**********	4.2	30	4.2	45	MG/L
10-Nov-2009	TSS	0.08	1.7	0.08	2.6	KG/D	NULL	**********	4	30	4	45	MG/L
09-Dec-2009	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	**********	2.8	30	2.8	45	MG/L
05-Jan-2010	TSS	0.27	1.7	0.27	2.6	KG/D	NULL	**********	13.8	30	13.8	45	MG/L
05-Feb-2010	TSS	0.3	1.7	0.3	2.6	KG/D	NULL	**********	24.8	30	24.8	45	MG/L
09-Mar-2010	TSS	0.002	1.7	0.002	2.6	KG/D	NULL	**********	5.96	30	5.96	45	MG/L
09-Apr-2010	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	8.97	30	8.97	45	MG/L
05-May-2010	TSS	0.15	1.7	0.15	2.6	KG/D	NULL	**********	13.8	30	13.8	45	MG/L
10-Jun-2010	TSS	0.01	1.7	0.01	2.6	KG/D	NULL	**********	4.3	30	4.3	45	MG/L
07-Jul-2010	TSS	0.03	1.7	0.03	2.6	KG/D	NULL	**********	3.9	30	3.9	45	MG/L
06-Aug-2010	TSS	0.27	1.7	0.27	2.6	KG/D	NULL	**********	13.9	30	13.9	45	MG/L
10-Sep-2010	TSS	0.11	1.7	0.11	2.6	KG/D	NULL	**********	7.2	30	7.2	45	MG/L
12-Oct-2010	TSS	0.03	1.7	0.03	2.6	KG/D	NULL	**********	3.5	30	3.5	45	MG/L
02-Nov-2010	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	13.4	30	13.4	45	MG/L
09-Dec-2010	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	12	30	12	45	MG/L
06-Jan-2011	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	19.3	30	19.3	45	MG/L
08-Feb-2011	TSS	0.63	1.7	0.63	2.6	KG/D	NULL	**********	34	30	34	45	MG/L
08-Mar-2011	TSS	0.09	1.7	0.09	2.6	KG/D	NULL	**********	6.32	30	6.32	45	MG/L
08-Apr-2011	TSS	0.1	1.7	0.1	2.6	KG/D	NULL	**********	26.3	30	26.3	45	MG/L
04-May-2011	TSS	0.36	1.7	0.61	2.6	KG/D	NULL	**********	32.1	30	40.6	45	MG/L
10-Jun-2011	TSS	0.07	1.7	0.07	2.6	KG/D	NULL	**********	23.1	30	23.1	45	MG/L
07-Jul-2011	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	16.8	30	16.8	45	MG/L
08-Aug-2011	TSS	0.4	1.7	0.4	2.6	KG/D	NULL	**********	14.4	30	14.4	45	MG/L
08-Sep-2011	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	6	30	6	45	MG/L
11-Oct-2011	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	**********	3.0	30	3.0	45	MG/L
08-Nov-2011	TSS	0.01	1.7	0.01	2.6	KG/D	NULL	**********	12	30	12	45	MG/L
08-Dec-2011	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	19.2	30	19.2	45	MG/L
06-Jan-2012	TSS	0.03	1.7	0.03	2.6	KG/D	NULL	**********	17.1	30	17.1	45	MG/L
08-Feb-2012	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	9.4	30	9.4	45	MG/L
08-Mar-2012	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	8.0	30	8.0	45	MG/L
03-Apr-2012	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	7.31	30	7.31	45	MG/L
10-May-2012	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	11.8	30	11.8	45	MG/L
08-Jun-2012	TSS	0.03	1.7	0.03	2.6	KG/D	NULL	**********	18.3	30	18.3	45	MG/L
10-Jul-2012	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	11.3	30	11.3	45	MG/L
08-Aug-2012	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	**********	19.4	30	19.4	45	MG/L
06-Sep-2012	TSS	0.04	1.7	0.04	2.6	KG/D	NULL	**********	6.91	30	6.91	45	MG/L
05-Oct-2012	TSS	0.15	1.7	0.15	2.6	KG/D	NULL	**********	10.9	30	10.9	45	MG/L
06-Nov-2012	TSS	0.05	1.7	0.05	2.6	KG/D	NULL	**********	5.6	30	5.6	45	MG/L
06-Dec-2012	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	**********	15.8	30	15.8	45	MG/L
11-Jan-2013	TSS	0.05	1.7	0.05	2.6	KG/D	NULL	**********	12	30	12	45	MG/L
07-Feb-2013	TSS	0.01	1.7	0.01	2.6	KG/D	NULL	**********	11.2	30	11.2	45	MG/L
08-Mar-2013	TSS	0.06	1.7	0.06	2.6	KG/D	NULL	**********	17.5	30	17.5	45	MG/L
08-Apr-2013	TSS	0.03	1.7	0.03	2.6	KG/D	NULL	**********	9.41	30	9.41	45	MG/L

08-May-2013	TSS	0.2	1.7	0.2	2.6	KG/D	NULL	*********	12.7	30	12.7	45 MG/L
07-Jun-2013	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	*********	3.3	30	3.3	45 MG/L
09-Jul-2013	TSS	0.11	1.7	0.11	2.6	KG/D	NULL	*********	6.59	30	6.59	45 MG/L
05-Aug-2013	TSS	0.007	1.7	0.007	2.6	KG/D	NULL	*********	2.8	30	2.8	45 MG/L
05-Sep-2013	TSS	0.02	1.7	0.02	2.6	KG/D	NULL	*********	6.9	30	6.9	45 MG/L

ATTACHMENT 8

Ammonia Limitation Derivations (2013)

10/4/2013 10:28:51 AM

Facility = Middleburg Academy
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 19.9
WLAc = 2.22
Q.L. = 0.2
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.47922760738421
Average Weekly limit = 4.47922760738421
Average Monthly LImit = 4.47922760738421

The data are:

9

ATTACHMENT 9

Ammonia Limitation Derivations (2004)

Analysis of the Notre Da[illegible] Academy effluent data fo[illegible]mmonia

The statistics for Ammonia are:

Number of values	=	1
Quantification level	=	.2
Number < quantification	=	0
Expected value	=	29
Variance	=	302.76
C.V.	=	.6
97th percentile	=	70.56911
Statistics used	=	Reasonable potential assumptions - Type 2 data

The WLAs for Ammonia are:

Acute WLA	=	11.9
Chronic WLA	=	1.47
Human Health WLA	=	----

The limits are based on chronic toxicity and 1 samples/month.

Maximum daily limit	=	2.149985
Average monthly limit	=	2.149985

It is recommended that only the maximum daily limit be used.

DATA
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ATTACHMENT 10

Total Residual Chlorine Limitation Derivation

10/4/2013 10:29:38 AM

Facility = Middleburg Academy
Chemical = Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
# samples/mo. = 28
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.8252545713861E-03
Average Monthly LImit = 8.02152773888032E-03

The data are:

0.2

ATTACHMENT 11

1978 Stream Model

STREAM ASSIMILATION ANALYSIS

Stream: Goose Creek Date: 6-20-78

Discharge: Notre Dame Academy Topo. Sheet:

Critical Discharge: .009

Gauging Station: Goose Creek near Leesburg

Computation Number				
Drainage Area				
Stream temperature	30			
Saturation D.O.	7.6			
D.O. Discharge	5			
K_1 (carbonacious).....	.215			
K_n (nitrogenous)	0			
K_2 (reaeration)	1.7			
Flow, mgd (discharge)	.015			
BOD_5 (discharge)	30			
NOD_u (discharge	0			
Flow, mgd (stream).....	0.5			
BOD_5 (stream)	2			
NOD_u (stream)	0			
Length of segment (mi)	2			
Velocity of stream (fps) ...	.5			
D.O. (allowable)	6.6			
D.O. (stream)	(6.8)			
Δ D.O. from allowable	0.166			
(Red indicates violation)				
Flow (combined).....	0.515			
BOD_5 decay @ t	2.33			
NOD_u decay @ t	0			
time, days	0.04			
D.O. @ t ("A" indicates ... Critical D.O.)	6.77)			

Discharge results in no change in receiving stream.

Class III - Recreation: small discharge, more than 20 mile, upstream from public water supply.

Stream Data from Middleburg analysis used. Stream flow of 0.5 mgd is very conservative, as Goose Creek flow approximately 4 miles downstream is 1 mgd.

Standards for Notre Dame Academy: 30 mg/l BOD_5 (85)
5.0 mg/l D.O.
.015 mgd Flow

Note: At the end of each segment, if critical D.O. has not been reached, the next stream segment should be analyzed. The parameter values determined @ time = t become the new "stream" data and new flows introduced to the stream (eg: tributaries, STP discharges, stretch flows) become the new "discharge" data. [K_1, K_n and K_2 must be adjusted as necessary]

ATTACHMENT 12

Public Notice

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: January 9, 2014 to February 7, 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Middleburg Academy, Incorporated
35321 Notre Dame Lane, Middleburg, VA 20117
VA0027197

PROJECT DESCRIPTION: Middleburg Academy, Incorporated has applied for a reissuance of a permit for the private Middleburg Academy. The applicant proposes to release treated sewage wastewaters from a private school at a rate of 0.015 million gallons per day into a water body. Sludge from the treatment process will be transported to Blue Plains Wastewater Treatment Plant (DC0021199) for further treatment and disposal. The facility proposes to release the treated sewage in the Goose Creek, UT, in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, biochemical oxygen demand, total suspended solids, dissolved oxygen, ammonia, E. coli and total residual chlorine.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, email, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Douglas Frasier
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3873 Email: Douglas.Frasier@deq.virginia.gov Fax: (703) 583-3821